Leslie Salt Co.
A CARGILL CO.

7200 CENTRAL AVENUE
NEWARK, CA 94560 • (415) 797-1820

May 12, 1989

Mr. Dale Bowyer
Sanitary Engineer Associate
Regional Water Quality Control Board
1111 Jackson St., Room 6000
Oakland, CA 94607

Dear Mr. Bowyer:

As we discussed, please find attached two reports concerning the proposed discharge of Leslie Salt Co. bittern. These reports have been prepared by S.R. Hansen & Associates. The first report, "Evaluation of the Options for the Discharge of Bittern", evaluates the different options for bittern discharge. Environmental regulating conditions are used as the first screening criteria followed by a broad brush economic evaluation. Option #8, Combination of Untreated Bittern with Treated USD Effluent and Discharge through the EBDA Diffuser, has been selected as the preferred alternative as a result of this evaluation.

The second report entitled, "Study Plan for the Evaluation of the Discharge of Leslie Salt Bittern Into the EBDA Discharge Line identifies the proposed biological study plan for the preferred Option #8 ". This plan is proposed to generate the data necessary to make a valid scientific conclusion about the environmental effects, if any, of this discharge option.

We are eager to receive your feedback and feedback from the CA Department of Fish & Game on the Proposed Study Plan and how these would fulfill your needs for study on this issue. Leslie Salt will wait to proceed with these plans until your review is completed.

As always, if you have any questions, please do not hesitate to call.

Sincerely,

Barbara N. Ransom
Environmental Affairs Manager

BNR/tb

cc: M. Rugg, CA Department of Fish & Game
D. Requa, USD

C:\WS2000\BNR\5-11.DB

Copied
ES only

EVALUATION OF OPTIONS FOR THE DISCHARGE OF BITTERN

Prepared for

Leslie Salt Company
7220 Central Avenue
Newark, California 94560

Prepared by

S.R. Hansen and Associates
83 Fairlawn Drive
Berkeley, California 94708

MAY 1989

EXECUTIVE SUMMARY

The Leslie Salt Company is currently evaluating alternatives for the disposal of bittern produced at its facilities in South San Francisco Bay. This report presents an evaluation of possible discharge options with the objective of identifying the one option with the highest potential for successful implementation.

The evaluation process consisted of four steps. First all possible discharge options were identified. Second, each of these options was evaluated as to its ability to gain regulatory approval. Third, those options which passed the regulatory screen were then evaluated for economic feasibility. Fourth, the results of the regulatory and economic analyses were synthesized to select the best overall option.

The evaluation process started with a preliminary list of ten discharge options. This list was intended to include all options which had at least a potential to successfully handle bittern and gain regulatory permission. These ten options were:

Option #1 - Direct Discharge to S.F. Bay
Option #2 - Diffuser Discharge to S.F. Bay
Option #3 - Predilution with Bay Water and Discharge to S.F. Bay
Option #4 - Predilution with Other than Bay Water and Discharge to S.F. Bay
Option #5 - Ocean Disposal
Option #6 - Diffuser Discharge of Combined Union Sanitary District (USD) and Bittern Effluent
Option #7 - Season Diffuser Discharge of Combined USD and Bittern Effluent
Option #8 - Combination with USD Effluent and Discharge through the East Bay Discharges Authority (EBDA) Diffuser
Option #9 - Discharge to the USD Wastewater Treatment Plant
Option #10 - Marsh Discharge of Combined USD and Bittern Effluent

The regulatory evaluation of each of these ten options was performed in a step-wise fashion. First, the types of permits which would be required to implement the option were identified. Second, the relative difficulty in obtaining these permits was discussed. Third, all available data were reviewed to predict whether or not the most difficult permit conditions could be

met. Based on these evaluations five options were identified as having a potential for gaining regulatory permission. These five options were ranked as follows:

Highest Potential for Successful Permitting
Option #9 - Discharge into the USD Plant

Fair Potential for Successful Permitting
Option #8 - Combination with USD Effluent and Discharge through EBDA
Option #5 - Ocean Discharge

Low Potential for Successful Discharge
Option #6 - Diffuser Discharge of Combined USD and Untreated Bittern Effluent
Option #7 - Seasonal Diffuser Discharge of Combined USD and Untreated Bittern Effluent

The economic feasibility of each of the five options which passed the regulatory screen was determined based on preliminary estimates of construction and operation costs. The results of this evaluation indicated that the options varied greatly as to cost and were ranked as follows:

Lowest Expense
Option #8 - Combination with USD Effluent and Discharge through EBDA

Low - Moderate Expense
Option #9 - Discharge into the USD Plant

Moderate - High Expense
Option #6 - Diffuser Discharge of Combined USD and Untreated Bittern Effluent
Option #7 - Seasonal Diffuser Discharge of Combined USD and Untreated Bittern Effluent

Highest Expense
Option #5 - Ocean Discharge

Synthesis of the results of the regulatory and economic evaluations identified two options which warrant serious consideration. Option #8 (Combination with USD Effluent and Discharge through EBDA) was judged the best overall discharge option because it would be the least expensive and would have a high potential for gaining regulatory approval.

However, Option #9 (Discharge into the USD Plant) also has high potential. It would have the fewest number of environmental hurdles to clear, but the cost would be relatively high. If the environmental issues associated with Option #8 (meeting USD's suspended solids and, perhaps, chromium limits) cannot be resolved, Option #9 may become the most attractive.

TABLE OF CONTENTS